

Amendments to the Claims

Please amend the claims, without prejudice, to read as follows:

1. (Currently Amended) A cutting unit for cutting continuous cigarette rods fed in a given travelling direction (6), the cutting unit (1) comprising:

a supporting body (9);

a cutting head (12) fitted to the supporting body (9) to rotate about a first axis (20), the cutting head (12) including a cutting drum (15), which rotates about a second axis (16) forming a given angle with said travelling direction (6), and has at least one radial blade (8);

a counter-cutting device (4), which is engaged by at least one said continuous cigarette rod (3);

motorized locking means (24) for angularly locking the cutting head (12) in position on said supporting body (9); said motorized locking means (24) including automatic release means (48) provided with a motorized actuator (53) for releasing the cutting head (12) with respect to the supporting body (9); and

motorized actuating means (27, 31, 32) that are separated from and structurally and operably independent from the motorized locking means (24) and interposed between the supporting body (9) and the cutting head (12) to rotate the cutting head (12) about said first axis (20) to vary said angle;

wherein the motorized locking means (24) does not utilize structure of the separated and structurally and operably independent motorized actuating means (27, 31, 32) for angularly locking the cutting head (12) in position on the supporting body (9) or for releasing the cutting head (12) with respect to the supporting body (9); and

wherein the motorized actuating means (27, 31, 32) does not utilize structure of the separated and structurally and operably independent motorized locking means (24) to rotate the cutting head (12) about the first axis (20) to vary the angle.

2. (Original) A cutting unit as claimed in claim 1, and also comprising sensor means (23) for determining said angle and for negative-feedback-controlling said actuating means (27, 31, 32).

3. (Original) A cutting unit as claimed in claim 2, wherein said sensor means (23) comprise a scale (33) located on said cutting head (12); and a fixed optical reader (35) for determining said angle on said scale (33).

4. (Previously presented) A cutting unit as claimed in claim 3, wherein said cutting head (12) further comprises a curved lateral surface (34) and a circle formed by the curved lateral surface (34) has an axis that is coaxial with said first axis (20); said curved lateral surface (34) supporting said scale (33); and said optical reader (35) facing said scale and being positioned radially with respect to said first axis (20).

5. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 1, and also comprising guide means (21) interposed between the cutting head (12) and the supporting body (9) to guide the cutting head (12) on the supporting body (9) during rotation about said first axis (20).

6. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 5, wherein said guide means (21) comprise a rib (25), which projects from said supporting body (9) and extends, on the supporting body (9), along a first arc; and a slot (26), which is formed on said cutting head (12), extends along a second arc of the same radius as the first arc, and is engaged in sliding manner by said rib (25).

7. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 1, wherein said actuating means (27, 31, 32) comprise a motor reducer (27) fitted to said supporting body (9); a pinion (31) parallel to said first axis (20) and activated by said motor reducer (27); and a ring gear (32) coaxial with said first axis (20), fitted to said cutting head (12), and engaged by said pinion (31).

8. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 1, wherein said supporting body (9) and said cutting head (12) comprise a first and, respectively, a second plate (11, 14) contacting each other; said locking means (24) comprising at least one pin (36) extending in axially sliding manner through said first plate (11) and fitted in transversely sliding and axially fixed manner to said second plate (14); elastic means (46) being interposed between

said pin (36) and said first plate (11) to compress and lock said first and second plate (11, 14) against each other.

9. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 8, wherein said pin (36) has an end portion comprising an end plate (38); said second plate (14) having a curved, T-section groove (39); and said end portion engaging said groove (39) in transversely sliding manner.

10. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 8, wherein said automatic release means (48) comprise push means (51) carried by said supporting body (9) and acting on said pin (36) to move the pin (36) axially in opposition to said elastic means (46).

11. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 10, wherein said push means (51) are cam means acting axially on said pin (36).

12. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 11, wherein said locking means (24) comprise two pairs of said pins (36); said automatic release means (48) comprising, for each said pair of pins (36), a rod (50), which has a third axis (52) crosswise to the relative said pins (36), and is fitted with two cams (51), each of which cooperates with one end (47) of a respective said pin (36), and an actuating device (53, 54, 56) for rotating said rod (50) about said third axis (52).

13. (Withdrawn, Rejoinder requested) A cutting unit as claimed in claim 12, wherein said actuating device (53, 54, 56) is common to said rods (50), and comprises a linear actuator (53); and an articulated quadrilateral, in turn comprising two cranks (55), each fitted to a respective said rod (50); said linear actuator (53) having an output (54) connected to one of said cranks (55).

14. (New) A dual-rod manufacturing machine (M) comprising:
a producing unit (59) for producing two substantially parallel, continuous cigarette rods (3) in a given travelling direction (6); and
a cutting unit (1) for cutting cigarette portions (2) of given length from the two substantially parallel, continuous cigarette rods (3);
wherein the cutting unit includes:

a supporting body (9);

a cutting head (12) fitted to the supporting body (9) to rotate about a first axis (20), the cutting head (12) including a cutting drum (15), which rotates about a second axis (16) forming a given angle with said travelling direction (6), and has at least one radial blade (8);

a counter-cutting device (4), which is engaged by at least one said continuous cigarette rod (3);

motorized locking means (24) for angularly locking the cutting head (12) in position on said supporting body (9), said motorized locking means (24) including automatic release means (48) provided with a motorized actuator (53) for releasing the cutting head (12) with respect to the supporting body (9); and

motorized actuating means (27, 31, 32) that are separated from and structurally and operably independent from the motorized locking means (24) and interposed between the supporting body (9) and the cutting head (12) to rotate the cutting head (12) about said first axis (20) to vary said angle;

wherein the motorized locking means (24) does not utilize structure of the separated and structurally and operably independent motorized actuating means (27, 31, 32) for angularly locking the cutting head (12) in position on the supporting body (9) or for releasing the cutting head (12) with respect to the supporting body (9); and

wherein the motorized actuating means (27, 31, 32) does not utilize structure of the separated and structurally and operably independent motorized locking means (24) to rotate the cutting head (12) about the first axis (20) to vary the angle.

15. (New) The machine of claim 14 further comprising sensor means (23) for determining said angle and for negative-feedback-controlling said actuating means (27, 31, 32).

16. (New) The machine of claim 15, wherein said sensor means (23) includes a scale (33) located on said cutting head (12), and a fixed optical reader (35) for determining said angle on said scale (33).

17. (New) The machine of claim 16, wherein said cutting head (12) further comprises a curved lateral surface (34) supporting said scale (33) and a circle formed by the curved lateral surface (34) has an axis that is coaxial with said first axis (20); and

wherein said optical reader (35) faces said scale and is positioned radially with respect to said first axis (20).

18. (New) The machine of claim 14 further comprising a main motor (60) of the machine, which drives a shaft (17) of the cutting drum (15) to rotate the cutting drum (15) about the second axis (16).